

CENTRAL VALLEY WATER BOARD STAFF SURVEY WRITE-UP

City of Live Oak

Wastewater Treatment Plant, Sutter County

MUN Beneficial Use Project

15 March 2012

On 15 March 2012, Anne Littlejohn and Calvin Yang conducted a site visit of the City of Live Oak Wastewater Treatment Plant's receiving water bodies and the downstream area. The purpose of this trip was to conduct a field survey and reconnaissance for potential monitoring locations. Mr. William Lewis, Public Works Director from the City of Live Oak, participated in the site visit.

The City of Live Oak Wastewater Treatment Plant is located on the southwest side of the City of Live Oak in Sutter County. The treatment plant's effluent is released into Lateral 2 which flows downstream to Lateral 1, East Interceptor Canal, Wadsworth Canal and then to the Sutter Bypass. Water from these receiving water bodies may be distributed throughout District 777 and portions of Reclamation District 2056 via a number of canals, laterals and drains. Sources of water include the Feather River, urban runoff, storm runoff and groundwater.

The morning of the visit was overcast and breezy with periodic light rain. In general, all of the channels had higher and more turbid flow due to recent rains as compared to photographs taken by Mr. Lewis on a dry day earlier in the same week. Many of the surrounding parcels produce rice or winter wheat crops, but there was no irrigation taking place due to the time of year.

The first site was the effluent discharge point from the treatment plant. Photo 1 shows the oxygenating effluent leaving the plant to Lateral 2. Photos 2-3 show the RSW-001 upstream site on Lateral 2, looking upstream and downstream, respectively. Photos 4-5 show the RSW-002 downstream site on Lateral 2, looking upstream and downstream, respectively.

Traveling south, the next site was at Lateral 1 at Clark Road, downstream of its confluence with Lateral 2. Photo 6 shows Lateral 1 flowing downstream under Clark Road. Just south of that location, Photo 7 shows a non-flowing supply channel for the Sutter Extension Water District where it crosses Broadway Road and Lateral 1. Photo 8 shows Lateral 1 on the east side of Broadway Road and a drain pipe off of an adjacent field.

Lateral 1 continues to flow south until it reaches the East Intercepting Canal near Pease Road. Photo 9 is a view looking upstream at the East Intercepting Canal upstream of its confluence with Lateral 1. Photo 10 is the East Intercepting Canal at Pease Road facing downstream where Township Road crosses over it. The channel was very steep and the flow was low and pooling in places. It was not possible to visit East Interceptor Canal at its confluence with Lateral 1 or where it flows into Wadsworth Canal because these areas fall on private property.

Wadsworth Canal runs southwest from north of Butte House Road to the Sutter Bypass. Franklin Road is the last public access road to cross Wadsworth prior to its confluence with Sutter Bypass. Photos 11-12 show Wadsworth Canal at the southeast corner near Franklin Road, looking upstream and downstream, respectively. This area of Wadsworth Canal was not ideal for sampling as the channel is steep and muddy with heavy vegetation in the water, making it difficult to reach the main flowing areas of the channel. After traversing the canal up and downstream of Franklin Road, one location was found as a potential sampling site about 3500 feet downstream of Franklin Road and about 2000 feet upstream of its confluence with the Sutter Bypass. A gravel public access road runs parallel to Wadsworth Canal to the Sutter Bypass.

There is a bridge that crosses the Sutter Bypass downstream of the confluence with the Wadsworth Canal. Photos 13-14 show the Sutter Bypass at the bridge location looking upstream and downstream, respectively. The immediate upstream area of the Sutter Bypass is on private property and not accessible. An alternative site was found by continuing on Franklin Road until it crosses Sutter Bypass, about a mile and a half upstream of the Wadsworth Canal confluence. Photos 15 shows a downstream view of the Sutter Bypass at Franklin Road

Field measurements and GPS coordinates for the sites visited are summarized in Table 1.

Photo 1. Effluent discharge from the City of Live Oak Wastewater Treatment Plant



Photo 2. Lateral 2 upstream site RSW-001, looking upstream



Photo 3. Lateral 2 upstream site RSW-001, looking downstream



Photo 4. Lateral 2, at the downstream RSW-002 site, looking upstream



Photo 5. Lateral 2, at the downstream RSW-002 site, looking downstream



Photo 6. Lateral 1 at Clark Road, looking downstream



Photo 7. Sutter Extension Water District Supply Canal at Broadway Road



Photo 8. Lateral 1 at Broadway Road, looking upstream



Photo 9. East Interceptor Canal at Pease Road, looking upstream



Photo 10. East Interceptor Canal at Pease and Township Roads, looking downstream



Photo 11. Wadsworth Canal at Franklin Road, looking upstream



Photo 12. Wadsworth Canal at Franklin Road, looking downstream



Photo 13. Sutter Bypass, downstream of Wadsworth Canal, facing upstream



Photo 14. Sutter Bypass, downstream of Wadsworth Canal, facing downstream



Photo 15. Sutter Bypass at Franklin Road, facing downstream



Table 1. GPS coordinates and General Field parameters

Site Description	Latitude	Longitude	Water Temp. °C	pH	DO (mg/L)	SC (µS/cm)
RSW-001, Lateral 2 upstream of effluent discharge	39.25980	-121.67762	13.5	7.37	7.11	454
RSW-002, Lateral 2 downstream of effluent discharge	39.25970	-121.67790	15.05	7.63	8.17	477
Lateral 1 at Clark Road	39.23262	-121.67850	14.46	7.65	8.31	531
Lateral 1 at Broadway Road crossing	39.22492	-121.67850	-	-	-	-
East Interceptor Canal at Pease and Township Roads	39.17086	-121.68844	-	-	-	
Wadsworth Canal downstream of Franklin Road	39.11828	-121.76411	15.18	7.97	9.38	388
Sutter Bypass, downstream of Wadsworth Canal confluence	39.11246	-121.76810	13.07	7.88	8.78	398
Sutter Bypass, upstream of Wadsworth Canal confluence at Franklin Road	39.12893	-121.79556	13.4	7.98	9.52	376